

Naming segregates from the *Columba–Streptopelia* pigeons following DNA studies on phylogeny

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In their pigeon phylogeny reconstructed through mtDNA analysis, Johnson *et al.* (2001) identified, within the monophyletic Old World *Columba*/*Streptopelia* lineage, four clades: two match the classical taxonomy of Old World *Columba* and most *Streptopelia* (clade A) respectively. The other two, sister to each other, represent in one line (clade C) *chinensis* and *senegalensis*, conventionally placed with little dispute in *Streptopelia*, and in the other (clade B) two species whose generic attribution has recently fluctuated according to different authors: *mayeri* (*Columba*, *Nesoenas*) and *picturata* (*Streptopelia*, *Columba*). Depending on which analysis is performed, clades B and C are sister either to Clade A ('classic' *Streptopelia*) or to Old World *Columba*, i.e. the three-way split was perhaps *c.* 7–8 million years ago (based on the molecular clock used by Johnson *et al.* 2001), and could not be adequately resolved by the data. New World *Columba* split off earlier, leading Johnson *et al.* (2001) to re-assign them to a separate genus *Patagioenas* Reichenbach, 1853. K. P. Johnson (*in litt.* 2005) has emphasised that his paper cannot be considered a definitive molecular phylogeny for the *Columba*/*Streptopelia*, as an important tranche of African *Columba* was not included, namely *delegorguei*, *iriditorques*, *malherbii*, *larvata* and *simplex*. The two last-named species have often been placed in their own genus, *Aplopelia*, which Goodwin (1983) considered close in morphology to *picturata* (Malagasy or Madagascan Turtle Dove), and one might add also in voice (as described by Goodwin 1983 and Sinclair *et al.* 1993 for *larvata*).

In their taxonomic discussion Johnson *et al.* (2001) opted for a conservative interpretation, suggesting simply transferring *mayeri* (Mauritius Pink Pigeon) from *Columba*/*Nesoenas* to *Streptopelia*. However, given that the age of initial diversification within Old World *Columba* is similar to the split between clades B and C, it might be appropriate to group the four species in B and C within one genus. Alternatively, as the lines diverged rapidly, *mayeri*/*picturata* could be assigned to one genus and *senegalensis*/*chinensis* another. A third option, that the entire *Columba*/*Streptopelia* complex could, as sister to *Patagioenas*, be treated as a single large genus *Columba* with three or four subgenera, is unwieldy and would result in a far greater number of name changes.

The oldest valid name for any of the four species in clades B and C is *Stigmatopelia* Sundevall, created for *senegalensis* in 1872 (Sundevall 1872, Salvadori 1893). Sundevall also created *Spilopelia* for *chinensis* (whose races were at that time treated as three species) on the same page of the same work, but

Stigmatopelia has line precedence. In the two-genus option, *mayeri* and *picturata* would come under *Nesoenas* Salvadori, 1893, which was created for *mayeri* and has page precedence over the same author's *Homopelia* for *picturata* (Salvadori 1893). *Trocaza* Bonaparte, 1854, might be considered the oldest available name on the basis of Shelley's (1883) re-designation of the genus to include only *mayeri*; Shelley pointed out that the type species *Columba trocaz* does not exhibit the diagnostic feature (first primary shorter than fifth), leaving only *mayeri* within the definition. However, the fact remains, Bonaparte's error notwithstanding, that *trocax* is the type species, making *Trocaza* a junior synonym of *Columba*, and in any case nomenclaturally invalid.

In voice and plumage, as well as mtDNA, *mayeri* and *picturata*, are close (pers. obs.). In addition to mtDNA, Johnson *et al.* (2001) discussed their striking vocal resemblance. *Picturata* has been little studied behaviourally, but McKelvey (1976) reported a mixed pair with *mayeri*, thereby suggesting a close affinity. The uniform dark back, somewhat contrasting rump and tail, and paler head are shared characters (see, e.g., Sinclair & Langrand 1998), albeit much more emphasised in *mayeri*, which is a larger bird, approximately double the mass of *picturata* (Johnson *et al.* 2001). They do not phenotypically resemble Spotted Dove *S. chinensis* or Palm Dove *S. senegalensis*. These two, whilst not particularly similar to each other in appearance, do share a character that differs from other *Columba*/*Streptopelia* pigeons: distinctly bifurcated feathers in the display plumage on the neck (Salvadori 1893). Goodwin (1983) considered *chinensis* and *senegalensis* to form an isolated pair within *Streptopelia* as defined by him. He commented that, in addition to sharing the bifurcated feathers, they both lacked an 'excitement cry', and their song-calls ('advertising coo'), although dissimilar to each other, are unlike any other *Streptopelia*. Goodwin also noted that *picturata* (not then thought to be related) had 'more or less bifurcated' neck feathers, i.e. a hint of the character fully developed in *S. chinensis* and *S. senegalensis*. He considered *picturata* so anomalous that he did not include it in his putative relationship tree for the genus, and he was also uncertain where to place *mayeri*, including it within *Columba* in the 1967 edition of his work, but restoring *Nesoenas* in 1983, following McKelvey's observations (1976) recording behaviour rather more like *Streptopelia* than *Columba*. Gibbs *et al.* (2001), following Sibley & Monroe (1990), placed *picturata* with *mayeri* in *Columba*.

Here I propose that in order to formally recognise the particularities of these four species, *mayeri* and *picturata* be united in *Nesoenas*, with *chinensis* and *senegalensis* in *Stigmatopelia*. Further studies may well be desirable to further elucidate their relationships, and these would be best conducted in Mauritius, where all four species are now present sympatrically—the two *Nesoenas* native (Mourer-Chauviré *et al.* 1999), the two *Stigmatopelia* introduced, *chinensis* long ago (c.1781: Cheke 1987) and *senegalensis* recently (1995: Jones 1996), but now well established (pers. obs. 2003). *Picturata* was long thought to have been introduced to the Mascarenes (Jones 1987, Johnson *et al.* 2001), although Cheke (1987)

considered the matter open. However, subfossil material from all three islands now demonstrates it to be native (Mourer-Chauviré *et al.* 1999), albeit perhaps subject to supplementary introduction from Madagascar (Cheke 1987).

As *Stigmatopelia* has not appeared in recent synonymies it may be appropriate to re-cite it, as follows:

Stigmatopelia Sundevall 1872.

Methodi naturalis avium disponendarum tentamen, p.100.

Type by subsequent designation, Salvadori, 1893, Cat. Birds. Brit. Mus., 21, p. 448.

Columba senegalensis Linnaeus, 1766.

Stigmatopelia senegalensis (Linnaeus, 1766).

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